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separate from each other, but occasionally they remain connected by a bridge of substance, and in some cases this is elongated, so that when several daughter-nuclei in succession are thus joined they resemble a rosary.

Both forms of fragmentation may occur side by side in the same muscle, and even in the same nucleus. Besides these nearly transverse divisions, a longitudinal splitting of the nucleus is sometimes met with.

□.

Are the Solpugids Poisonous? — It has long been a disputed question as to whether the arachnids known as Solpugids are poisonous or not. In the regions where they occur they have a very bad reputation; but naturalists who have studied their structure have never found poison glands or ducts. Recently Lönnberg¹ has described his observations on *Galeodes araneoides* in the neighborhood of Baku, on the Caspian. He found that the “falanger,” as the Russians call it, did not poison insects and other animals upon which it preyed. In attacking a small scorpion it crushed one of the slender joints of the abdomen and then the segment containing the poison sac. It next attacked the larger abdominal segments, working its jaws into the interior and devouring the flesh. During this whole time the scorpion struggled and fought, moving freely and showing no sign of being poisoned. It could not penetrate the skin of a frog, although it attempted to bite it several times. Finally Lönnberg and a friend both allowed the *Galeodes* to attempt to bite them; but its jaws were not strong enough to penetrate the thickened skin of the finger tips, while flies which were bitten, but which did not have the nervous system injured, were able to crawl around a long time after being bitten. These facts, together with the absence of openings in the chelæ through which poison could escape, led Lönnberg to the conclusion that *Galeodes* at least is not venomous. At the time for hibernation it dug into the ground, using the two anterior pairs of legs, but where the earth was harder it used the chelæ to remove small stones and bits of clay.

New Jersey Insects. — Professor J. B. Smith's list of the insects occurring in New Jersey is issued as a Supplement to the 27th *Annual Report of the State Board of Agriculture* and may be considered a revised and enlarged edition of the one published in 1890 by the Geological Survey of New Jersey. It makes a volume of more than

¹ *Öfversigt k. Vet. Akad. Förhandl. Stockholm*, Bd. lvi (1900), p. 977.

750 pages, with 328 cuts and two maps; one of the maps shows the locations of the colonies of the San José scale, and the other is the 1896 relief map of the State Geological Survey. The list proper is preceded by short chapters dealing with the development of insects, their injuries, insecticides, and machinery.

According to the summary given on page 701, Professor Smith's first list contained 238 families, 2307 genera, and 6098 species; in the volume under consideration 329 families, 3181 genera, and 8537 species are recorded. The increase in the number of families is apparent rather than real, as it is due to a more minute division than was deemed advisable in the earlier volume. As instances it may be noted that the bees listed in 1890 in two families are now given in fourteen, and the sawflies included in the Tenthredinidæ in 1890 are now divided into ten families.

The list, though a useful and interesting one, would have greater scientific value had Professor Smith followed Dr. Calvert's practice, in the Odonata, of including only those species of which he had seen specimens actually collected in the state, or for which the best authority could be cited. The records, "New Jersey probably," "should occur in New Jersey," "will probably occur in New Jersey," are frequent, and in some instances such statements include the data given for all the species of a family.

H.

Mating Instinct in Moths. — A. G. Mayer¹ carried 449 cocoons of *Callosamia promethea* from Cambridge, Mass., to Loggerhead Key, off the Florida coast. When the moths emerged they were many hundred miles south of the southernmost range of this species. Experiments were then made on the way in which the females attract the males. Males do not come to females in hermetically sealed glass boxes, but they do congregate about boxes which do not admit of a sight of the female, but which allow odors from the female to escape to the outer air. Males will seek out such boxes even when the vapor of carbon bisulphide or of ethyl mercaptan is escaping from the box, together with such odorous material as the female may produce. The sense organs of the males stimulated by these substances are the antennæ, for when these organs are covered with shellac, glue, or other impervious materials, the males no longer seek the females. Females thirty to sixty hours old are much more attractive to males than young females five to ten hours old. Virgin

¹ Mayer, A. G. On the Mating Instinct in Moths, *Psyche*, vol. ix (1900). pp. 15-20.